

DESCRIPTION OF A PHYTOPHAGOUS DORYCTINE  
BRACONID FROM BRASIL  
(HYMENOPTERA: BRACONIDAE)

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*Abstract.*—A new species of the doryctine braconid genus *Allorhogas* is described from Brasil. Biological studies of this species suggest that it is phytophagous on tissue of legume seeds.

*Key Words:* Braconidae, Doryctinae, phytophagous

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In 1986 several specimens of a doryctine braconid were submitted for identification by Margarete de Macêdo and Richard Monteiro, Universidade Federal do Rio de Janeiro, Brasil. Biological information with the specimens stated that they were reared from legume seeds and were apparently feeding on the seed tissue. I identified the braconids as an undescribed species of *Allorhogas* Gahan. Although many specimens of this genus have been reared from galls or stems (Marsh 1979) or seeds (Whitehead 1975), it has usually been suspected they attacked some sort of insect larva in these plant tissues. Phytophagy had never been reported, or even suspected, in Braconidae. However, these researchers seemed to have good evidence that the braconids were indeed feeding on the seed tissue and have subsequently published preliminary results of their studies on the biology of these wasps (de Macêdo and Monteiro 1989).

Most of the specimens of the genus *Allorhogas* in the USNM collection, both described and undescribed species, have long ovipositors characteristic of the subfamily Doryctinae and suggesting the need to penetrate plant tissue to find host larvae. However, both *A. muesebecki* Guimarães and

the new species described here have extremely short ovipositors which could indicate they do not need to find a host deep in plant tissue. Guimarães (1957) states that *A. muesebecki* was reared from plant galls and concluded that, since this was the only insect reared from the galls, the galls were possibly induced by the wasp.

Although phytophagy has never been found before in the Braconidae, it does occur sporadically in the Chalcidoidea (some Eurytomidae, Torymidae and Eulophidae, and all Tanaostigmatidae and Agaonidae). Seeds are highly nutritious, and doryctine braconids, as ectoparasites which usually paralyze their hosts (idiobionts), could be considered little more than specialized

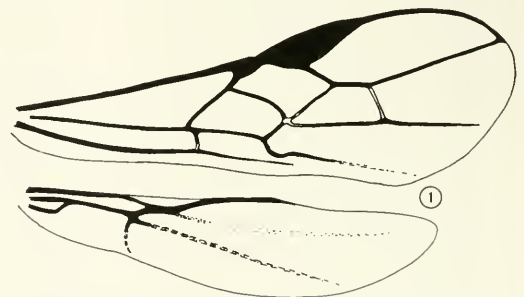
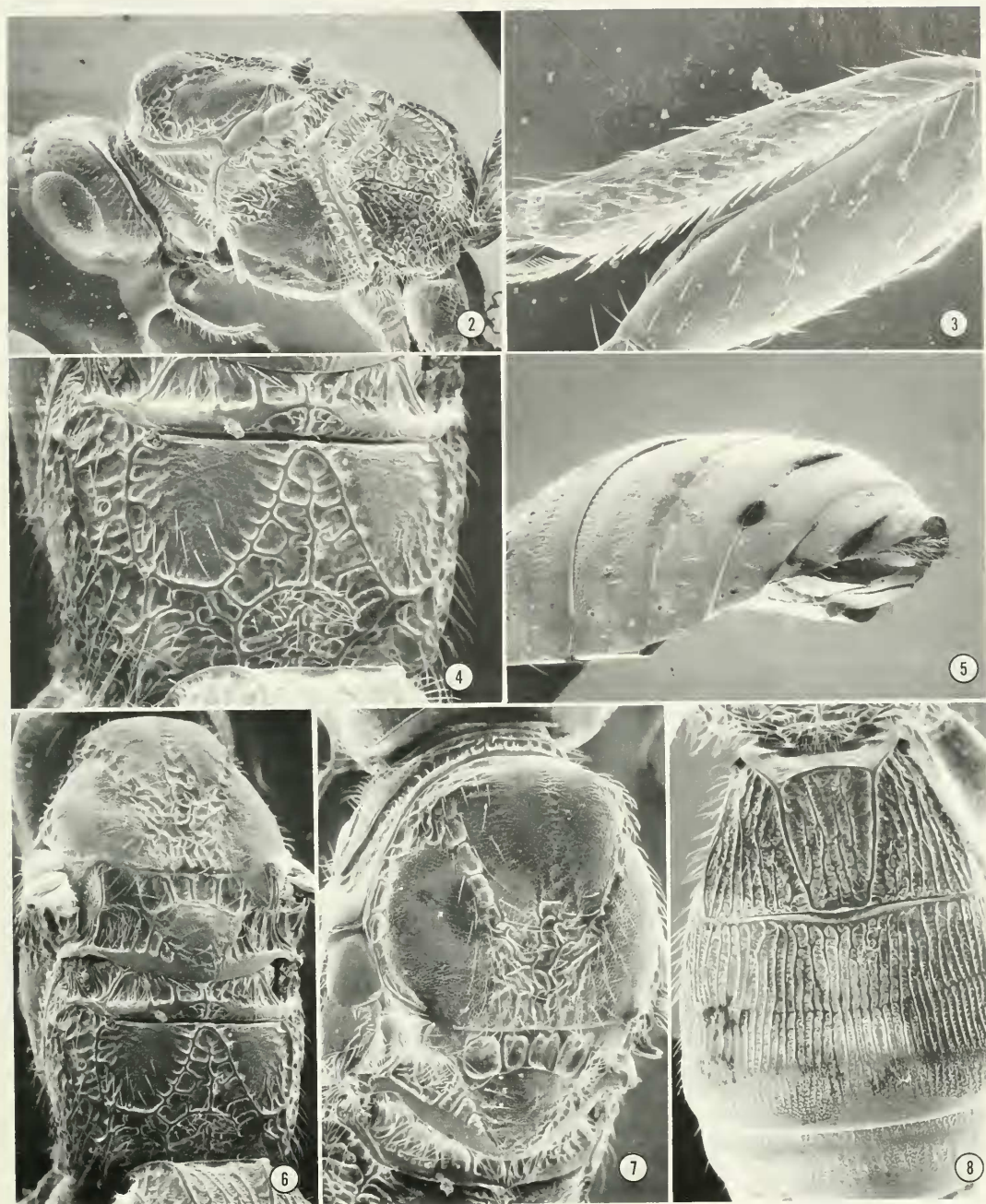


Fig. 1. *Allorhogas dyspistus*, n. sp., fore and hind wings.



Figs. 2-8. *Allorhogas dyspistus*, n. sp.: 2, head and thorax, lateral view; 3, fore tibia; 4, propodeum, dorsal view; 5, metasoma, lateral view of apex; 6, thorax, dorsal view; 7, mesonotum, dorsal view; 8, metasoma, dorsal view.

predators, so why not evolve to eat seed tissue when insect hosts are not present? We know very little about the biologies of Braconidae which attack cryptic hosts in plant tissue, particularly in the tropics, and although it seems incredible at first, perhaps the occurrence of phytophagy is not that unreasonable. There are other doryctine genera with species that have been reared from seeds, e.g. *Stenocorse* and *Heterospilus*. The two species of these genera associated with seeds plus several undescribed neotropical species of *Heterospilus* all have very short ovipositors similar to the *Allorhogas* species mentioned here. Clearly there need to be more detailed studies of this phenomenon and I hope that this paper and the study by de Macêdo and Monteiro will stimulate such research.

*Allorhogas dyspistus* Marsh,  
NEW SPECIES

Female.—Body length, 3.5–4.0 mm; fore wing length, 3.0 mm. Body color: honey yellow; antennal flagellum, lateral faces of scutellum, metanotum and basal-lateral areas of propodeum, ovipositor sheaths, hind tarsus, spots at apex of first tergum, and transverse stripe across middle of tergum 2+3 black; wing veins brown, stigma translucent. Head: antenna with 27–28 flagellomeres; face weakly granulo-rugose with smooth raised median area; frons, vertex and temple granular; frons concave; malar space  $\frac{2}{5}$  eye height; ocelli small, diameter of lateral ocellus about  $\frac{1}{3}$  ocell-ocular distance. Thorax: propleuron (Fig. 2) rugose with median longitudinal scrobiculate groove; mesonotum (Fig. 2) sharply declivous anteriorly, mesonotal lobes (Figs. 6, 7) granular, middle lobe with scrobiculate groove posteriorly which sometimes extends nearly to anterior edge, notauli scrobiculate and meeting posteriorly in wide rugose area; scutellum granular; mesopleuron (Fig. 2) granular, subalar groove strongly scrobiculate, sternaulus smooth; propodeum (Figs. 4, 6) rugose, with two weakly

granular or coriaceous semicircular areas laterally at base. Metasoma: first tergum (Fig. 8) wider at apex than long, arched at base, longitudinally striate, with two basal carinae connected by cross carina near base; tergum 2+3 longitudinally striate; fourth tergum striate on basal half; remainder of terga granular; ovipositor (Fig. 5) barely visible dorsally. Legs: fore tibia with row of 10–12 stout spines on anterior edge (Fig. 3). Wings (Fig. 1): first and second segment of radius in fore wing about equal in length; postnervellus in hind wing strongly curved toward wing apex.

Male.—Essentially as in female except femora swollen, hind femur length only slightly more than twice greatest width.

Holotype.—Female: BRASIL, Maricá, Rio de Janeiro; January 1986; ex seeds of *Pithecellobium tortum* Mart. Deposited in the U.S. National Museum, Washington, D.C.

Paratypes.—3 females, 8 males, same data as holotype. Deposited in the U.S. National Museum, the Canadian National Collection, Ottawa, and the Universidade Federal do Rio de Janeiro, Brasil.

Etymology.—The specific name is from the Greek *dyspistos* meaning “hard to believe, incredible,” which refers to the phytophagous behavior reported for this species.

This species is similar to *A. muesebecki* Guimarães, also from Brasil, but is distinguished by its larger eyes and shorter malar space; in *dyspistus* the malar space is  $\frac{2}{5}$  of the eye height, in *muesebecki* it is nearly equal to the eye height.

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## LITERATURE CITED

- Guimarães, J. A. 1957. Contribuição ao estudo de Cecidilogia Brasileira. Thesis, Esc. Nac. Agrón., Univ. Rural, Rio de Janeiro, p. 25.
- Macêdo, M. V. de and R. T. Monteiro. 1989. Seed predation by a braconid wasp, *Allorhogas* sp. (Hymenoptera). J. New York Entomol. Soc. 97: 358-362.
- Marsh, P. M. 1979. Family Braconidae, pp. 144-295. In Krombein, K. V. et al., eds., Catalog of Hymenoptera in America north of Mexico. Smithsonian Institution Press, Washington, D.C.
- Whitehead, D. R. 1975. Parasitic Hymenoptera associated with bruchid-infested fruits in Costa Rica. J. Wash. Acad. Sci. 65: 108-116.